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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/671,674      | 09/29/2003  | Harunobu Ogaki       | 03500.017617        | 8262             |

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EXAMINER

DAVIS, BRIAN J

ART UNIT PAPER NUMBER

1621

DATE MAILED: 03/16/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                                      |                                     |  |
|------------------------------|--------------------------------------|-------------------------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b><br>10/671,674 | <b>Applicant(s)</b><br>OGAKI ET AL. |  |
|                              | <b>Examiner</b><br>Brian J. Davis    | <b>Art Unit</b><br>1621             |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☒ Claim(s) 10 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>2/23/04;11/17/03</u> . | 6) <input type="checkbox"/> Other: ____.  |

## DETAILED ACTION

### *Claim Objections*

Claim 10 is objected to because of the following informalities: the claim contains a typographical error. The word *carried* has been misspelled as "carrie." Appropriate correction is required.

### *Claim Rejections - 35 USC § 112*

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 1 is rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for a process for producing halogenated aromatic amine compounds of the formula (3) where Ar<sup>1</sup> is (substituted) phenyl and Ar<sup>2</sup> is (substituted) biphenyl, does not reasonably provide enablement for the process for producing halogenated aromatic amine compounds of the formula (3) where Ar<sup>1</sup> and Ar<sup>2</sup> are defined as the universe of all possible aromatic rings ("... a substituted or unsubstituted monovalent (divalent) aromatic hydrocarbon ring group or a substituted or unsubstituted monovalent (divalent) aromatic heterocyclic ring group..."). The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the invention commensurate in scope with these claims.

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With regard to rejections under 35 USC 112, first paragraph, the following factors are considered (*In re Wands* 8 USPQ 2d 1400, 1404 (CAFC 1988)): a) Breadth of claims; b) Nature of invention; c) State of the prior art; d) Level of ordinary skill in the art; e) Level of predictability in the art; f) Amount of direction and guidance provided by the inventor; g) Working examples and; h) Level of experimentation needed to make or use the invention based on the content of the disclosure.

a)The claims are quite broad with respect to the compound prepared and starting materials used, *vide supra*. In fact, the molecular cores of the starting materials ( $Ar^1$  and  $Ar^2$ ), and thus the compound prepared, are not even specifically defined, other than as the *universe* of all possible monovalent aromatics in the case of  $Ar^1$  and the universe of all possible divalent aromatics in the case of  $Ar^2$ .

b,c)The nature of the invention is determined in part by the state of the prior art. The prior art in general teaches processes related to that of the instant invention under specific reaction conditions. That is, starting materials, products, catalysts, solvents, temperature ranges etc. are explicitly defined.

d)The level of skill in the art is considered to be relatively high.

e)The level of predictability in the art is considered to be relatively low. Even under the best of circumstances, and several hundred years after Lavoisier laid the foundations of its modern practice, chemistry remains an experimental science.

f,g)The amount of direction provided by the inventor is considered to be determined by the specification and the working examples. Applicant's working examples all use compounds where  $Ar^1$ = (substituted) phenyl and  $Ar^2$ =(substituted)

biphenyl. That is, applicant explicitly teaches an extremely limited set of compounds in relation to the breadth of the claim.

h) The specification must teach how to make and use the invention, not how to figure out for oneself how to make and use the invention. *In re Gardner*, 166 USPQ 138 (CCPA 1970). An undue amount of experimentation would be necessary to determine the metes and bounds of the instant claim. It simply beggars belief that the universe of all possible (substituted) aromatic rings could be utilized in the process as claimed.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-10 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by US 6,034,206, cited by the applicant in the specification.

The reference teaches the reaction of  $\text{Ar}^1\text{-NH}_2$ , for instance, aniline (column 6 line 2), with  $\text{Ar}^2(\text{X})_2$ , for instance, 1,4-dibromobiphenyl (column 6 line 49), in the presence of base, for instance, an alkali metal oxide (column 8 line 42) and a palladium complex, for instance,  $\text{Pd(II)Cl}_2$  (column 7 line 57), with a phosphorus-containing ligand having at least one cyclic hydrocarbon group, for instance, an arylphosphine (column 5 line 15), at a temperature of 50-200°C (column 9 line 9).

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In contrast to the instant halogenated aminobiphenyl compounds, however, although the process steps are the same, polyaryleneamines are produced by the prior art process outlined above. That is, in the prior art process both halogens react, whereas only one does so in the instant process. Case law is clear on this point, however: Where the steps for a process are the same as the prior art, and the only difference is the recital of the product produced, the process may properly be rejected as anticipated. *In re Sussman*, 141, F.2d 267, 60 USPQ 538, 540-541 (CCPA 1944).

### ***Conclusion***


The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: US 5,739,169 is cited to show similar processes.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian J. Davis whose telephone number is 571-272-0638. The examiner can normally be reached on 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Johann Richter can be reached on 571-272-0646. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
**BRIAN DAVIS**  
**PRIMARY EXAMINER**  
Brian J. Davis  
March 11, 2005